77. The method of Claim 44, wherein said particulate comprises a delaminated or naturally platy clay having an apparent Hercules viscosity of less than 391 cP as measured at 70% solids.

78. A product made by the method of Claim 44.

REMARKS

At the outset, Applicant gratefully acknowledges the courtesies extended by the Examiner to Applicant's undersigned counsel during the personal interview of April 14, 2003. At the interview, Applicant's counsel discussed a proposed amendment to the claims and the specification. The Examiner graciously agreed to reconsider his position in view of such amendments.

I. Status of the Specification

The specification has been amended to present data using units of apparent Hercules viscosity as well Hercules viscosity in order to be able to make viscosity comparisons. No new matter is added by this amendment because the additional information is merely a different presentation of the data. For example, the presentation of apparent Hercules viscosity from Hercules viscosity can be analogized to illustrating data in inches as well as centimeters. "By disclosing in a patent application a device that inherently performs a function or has a property...a patent application necessarily discloses that function...even though it says nothing explicit concerning it." MPEP § 2163.07(a).

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Apparent Hercules viscosity is found by multiplying the geometrical bob factor by the applied torque, divided by the Hercules viscosity, times a constant. Mathematically,

$$n = 9.55\frac{(s)(T)}{RPM}$$

where: n is the apparent Hercules viscosity in poise;
s is the geometrical bob factor (0.00020 for the bob used in the present case);
T is the torque in dynes-cm, calculated as spring constant multiplied by a horizontal pen displacement (spring constant is 100,000 dynes and horizontal pen displacement is 18 cm)
RPM is the Hercules viscosity value

The relationship between Hercules viscosity and apparent Hercules viscosity is generally known to those of ordinary skill in the art. As evidence thereof, Applicant encloses herewith a copy of the Hercules Viscometer manual for the Examiner's convenience.[1]

II. Status of the Claims

Claims 44-78 pending in this application. Claims 1-43 have been canceled. Support for the amendments can be found, for example, in the specification as amended. As discussed above, the amendments to the specification result from conversions of the data already present to apparent Hercules viscosity units.

[1] Because this document is not being submitted in connection with Applicant's duty of disclosure codified in 37 C.F.R. § 1.56, there is no need to formally submit it in an Information Disclosure Statement. It is, however, being submitted for its evidentiary value, and its consideration by the Examiner is invited. *See* MPEP § 2144.08(II)(B) ("Office personnel should consider all . . . evidence presented by applicants.")

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For instance, support for claims 44, and 48-56 can be found in Examples I-III at paragraphs [045]-[048]. No new matter has been added by these amendments and no estoppels are intended thereby. Applicant gratefully acknowledges the indication of allowable subject matter in Claims 12, 20, and 21-31 as originally filed.

III. Rejections under 35 U.S.C. §112 Second Paragraph

Claims 22 and 43 as originally filed are rejected under 35 U.S.C. § 112, second paragraph, for allegedly failing to particularly point out and distinctly claim that which is regarded as the invention. The Examiner alleged that claims 22 and 43 recited Markush groups that were indefinite because they included the language "chosen from" instead of --the group consisting of --. Applicant respectfully traverses this rejection, and note that there is no basis in the MPEP for requiring the language identified by the Examiner. Indeed, MPEP § 2173.05(h) refers to the language "selected from the group consisting of" as "**[o]ne** acceptable form of alternative expression", which plainly infers that there are other acceptable forms.

Nevertheless, by virtue of the amendments to the claims, the language to which the Examiner objects is no longer present. Accordingly, withdrawal of this rejection is earnestly solicited.

IV. Rejection under 35 U.S.C. §102(b)

The Office has rejected Claims 1-5, 8-11, 13, 16-18, 32, 33, 38, 41, and 42 as originally filed under 35 U.S.C. §102(b) as being allegedly anticipated by U.S. Patent No. 3,106,476 to Millman. Applicant traverses this rejection.

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Millman fails to teach every element of the claimed invention, so this rejection necessarily fails. *See, e.g.*, MPEP § 2131

> A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently, in a single prior art reference. The identical invention must be shown in as complete detail as is contained in, and must be arranged as required by, the claim.

Present claim 44, for example, is directed to "a method for improving the high and low shear rheology of a substantially grit-free and substantially fluid particulate suspension comprising kaolin clay . . . wherein at least one of said final apparent Hercules viscosity and said final Brookfield viscosity is at least 30% lower than said respective corresponding initial apparent Hercules or Brookfield viscosity." Millman is not directed to a method for improving the high and low shear rheology; rather, Millman is directed simply to a process for treating clays to produce slips of low viscosity. Col. 1, lines 1-4. Millman does not include all the limitations of claim 44, so Applicant respectfully submits this rejection should be withdrawn.

V. Rejection under 35 U.S.C. §§ 102(b)/103(a)

Claims 1-6, 8-11, 13, 17, 32, 37-39, and 41-43 as originally filed are rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over U.S. Patent No. 4,622,166 to Nakazawa et al. Applicant respectfully traverses this rejection.

Nakazawa et al. relates to a process that is distinctly different in a number of ways. First, the reference is directed to the preparation of an aqueous slurry of a **zeolite**. The present amended claims, by contrast, are directed to a method for

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improving the high and low shear rheology of a substantially grit-free and substantially fluid particulate suspension comprising **kaolin clay.** On at least this basis, the §102 aspect of the rejection should fall.

In addition, Nakazawa et al. relates to the preparation of a zeolite displaying a combination of static stability and dynamic stability. There is no indication in the reference that the Nakazawa et al. process is related, in any way, to a method for improving the high and low shear rheology of a substantially fluid particulate suspension comprising kaolin clay. The burden is on the Office to establish that "there is some suggestion or motivation, either in the reference itself or in the knowledge generally available to one of ordinary skill in the art, to modify . . . the reference teachings", and this burden has not been met. MPEP § 2143. Accordingly, the withdrawal of this rejection is earnestly solicited.

VI. Rejection under 35 U.S.C. § 102(e)

The Office has rejected Claims 1-6, 8-10, 13-19, 32, 34, 35, and 39-42 as originally filed under 35 U.S.C. §102(e) as being anticipated by U.S. Pat. No. 6,402,824 to Freeman et al. Applicant respectfully traverses this rejection, at least because Freeman et al. relates to processes for preparing precipitated calcium carbonate and not a method for improving the high and low shear rheology of a substantially grit-free and substantially fluid particulate suspension comprising kaolin clay. On at least this basis, the §102(e) rejection is improper and should be withdrawn.

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VII. Rejections under 35 U.S.C. §103(a)

The Office has rejected Claims 33 and 38 as originally filed under 35 U.S.C. §103(a) as obvious over Freeman et al. Applicant respectfully traverses this rejection.

This reference fails to render obvious the present claims. To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. MPEP § 2143.03. No portion of Freeman et al. teaches or suggests all the elements of the claimed invention, and indeed is silent regarding a method for improving the high and low shear rheology of a substantially fluid particulate suspension comprising kaolin clay. Accordingly, for at least this reason, the rejection should be withdrawn.

VIII. Conclusion

In view of the foregoing amendments and remarks, Applicant respectfully requests the reconsideration and reexamination of this application and the timely allowance of the pending claims. If the Examiner believes a telephone conference would be useful in resolving any outstanding issues, he is respectfully urged to contact Applicant's undersigned counsel at (202)408-4374.

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Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER, L.L.P.

Dated: May 12, 2003

By: _____
Brian M. Burn
Reg. No. 44,455

Attachment:
Hercules Viscometer Manual

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APPENDIX TO AMENDMENT OF MAY 8, 2003

Version with Markings to Show Changes Made

Amendments to the Specification

[045] The acid flocculated and dried SPS was dispersed with a blend of sodium polyacrylate and soda ash at about pH = 8 at various solids concentrations. The 0.5-gallon samples were milled/liquid worked in a Kady mill for 20 minutes. The samples were then dried in an air oven overnight keeping the temperature below 75°C. Each milled sample was checked for Brookfield and Hercules viscosity at approximately 65% solids and for particle size on the Sedigraph. The results of this work are summarized in the table below.

	As is SPS	Kady Mill Solids (%)			
		30	40	50	55
Brookfield Viscosity, cp @ 20 RPM (% improvement)	1580	1605 (-2%)	1090 (31%)	1375 (13%)	475 (70%)
Hercules Viscosity @ 18 Dynes, RPM	155	220	375	890	900
Apparent Hercules Viscosity, cP (% improvement)	**2218**	**1562 (30%)**	**917 (59%)**	**386 (83%)**	**382 (83%)**
Viscosity Solids, %	65.0	65.0	65.0	65.0	64.6
Particle Size					
- % < 5μ	97	97	97	97	97
- % < 2μ	76	78	78	77	78
- % < 1μ	57	59	60	59	61
- % < 0.5μ	33	37	38	39	40
- % < 0.2μ	8	13	14	16	17

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The results suggest that the Brookfield, as well as Hercules viscosity, is improved by Kady milling the kaolin sample.

[046] A spray dried sample of Capim NP was dispersed at 62% solids in water. The 0.5-gallon samples were milled/liquid worked in a Kady mill for 10 minutes and 20 minutes. The samples were then dried in an air oven overnight keeping the temperature below 75°C. Each milled sample was checked for Brookfield and Hercules viscosity at approximately 67% solids and for particle size on the Sedigraph. The results of this work are summarized in the table below.

	Spray Dried Capim NP	**Kady Milling Time**	
		10 Minutes	**20 Minutes**
Brookfield Viscosity, cp @ 20 RPM (% improvement)	210	135 (36%)	135 (36%)
Hercules Viscosity, RPM @ 18 Dynes or Dynes @ 1100 RPM	580 RPM	9.4 Dynes	7.0 Dynes
Apparent Hercules Viscosity, cP (% improvement)	**593**	**163 (73%)**	**121 (80%)**
Viscosity Solids, %	67.3	67.2	67.0
Particle Size			
- % < 5μ	98	99	98
- % < 2μ	81	81	81
- % < 1μ	59	60	60
- % < 0.5μ	35	36	36
- % < 0.2μ	11	12	11

The results show that the Brookfield and Hercules viscosity is improved by Kady milling the kaolin sample.

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[047] The processing is the same as in Example II except the product is Capim DG at 65% solids and viscosity testing was done at approximately 70% solids.

	Spray Dried Capim DG	Kady Milling Time	
		10 Minutes	20 Minutes
Brookfield Viscosity, cP @ 20 RPM	305	250	215
(% improvement)		(18%)	(30%)
Hercules Viscosity, RPM @ 18 Dynes or Dynes @ 1100 RPM	880 RPM	1100 RPM	12.2 Dynes
Apparent Hercules Viscosity, cP	**391**	**312**	**212**
(% improvement)		**(20%)**	**(46%)**
Viscosity Solids, %	70.0	70.1	70.2
Particle Size			
- % < 5μ	99	99	99
- % < 2μ	90	90	90
- % < 1μ	73	73	73
- % < 0.5μ	47	47	47
- % < 0.2μ	13	13	17

These results also show that the Brookfield and Hercules viscosity is improved by Kady milling the kaolin sample with none or insignificant change in measured particle size.

[048] A sample of DB-Plate re-blunged filter cake was obtained from the plant at 51.6% solids. Half-gallon samples of this material were Kady milled at 5 minutes, 10 minutes, and 20 minutes. A control sample was also run without subjecting it to Kady milling. The samples were then dried in an air oven overnight keeping the temperature below 75°C. Each sample was checked for Brookfield and Hercules

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viscosity at approximately 67% solids and for particle size on the Sedigraph. The results of this work are summarized in table below.

	Kady Milling Time			
	0 Minutes	**5 Minutes**	**10 Minutes**	**20 Minutes**
Brookfield Viscosity, cp @ 20 RPM (% improvement)	260	220 (15%)	225 (13%)	220 (15%)
Hercules Viscosity, RPM @ 18 Dynes	610	610	760	835
Apparent Hercules Viscosity, cP (% improvement)	**564**	**564 (0%)**	**452 (20%)**	**412 (27%)**
Viscosity Solids, %	67.5	67.7	67.5	67.7
Particle Size				
- % < 5μ	99	--	--	98
- % < 2μ	83	--	--	83
- % < 1μ	64	--	--	65
- % < 0.5μ	44	--	--	45
- % < 0.2μ	21	--	--	21

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